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- Importance of **NPV method** for measuring natural asset values
- High dependency on assumptions and projections

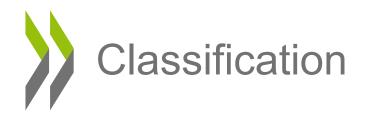
Three main questions addressed in this guidance note:

- 1. Is **further guidance** needed to improve and harmonise the measurement of resource rents and NPV calculations?
- 2. Are **alternative valuation techniques**, currently being developed in the context of ecosystem accounting, relevant for the SEEA-CF and SNA?
- 3. Are there **specific natural resources** for which valuation methods have recently evolved, and therefore should be translated into additional accounting guidance?



Question 1: Further guidance?

- Para. 29.103 and 29.105 of 2008 SNA address extending SNA to incorporate aspects of SEEA.
- Chapter 5 of the SEEA-CF contains comprehensive discussion of the valuation of natural resources.
- Two AEG documents examined valuation of natural resources by combining SEEA-CF approach with the SNA.



- Include further clarifications on the delineation of mineral and energy resources, by relying on the same three resource classes as in SEEA 2012:
 - Commercially recoverable resources
 - Potentially commercially recoverable resources
 - Non-commercial and other known deposits
- When reliable information on their value exists, include these three classes in the national accounts, provided that separate estimates can be compiled for the different classes.

Valuation (1)

- Underline that aim is to compile market values, not social values.
- Add clarifications on calculation of NPV for natural resources:

$$V_{t} = \sum_{s=0}^{S} \frac{p_{t+s} \cdot q_{t+s} - C(q_{t+s})}{(1+r)^{t+s}}$$

p: output price

5: asset lite

q: quantity

r: discount rate

C: extraction cost

- Use constant rate of extraction or most recent quantity of extraction as forecasts of future production
- Assume that output price of extracted resource follows a long-run historical trend
- Refer to Chapter 5 of SEEA-CF for guidance on other elements, such as depletion, opportunity costs and discount rate
- Compilers should try to compile values at disaggregated level



Emphasise specific compilation issues:

- 1. Sensitivity of results to the choice of the discount rate
- 2. Heterogeneity of extraction costs across space
- 3. Constraints imposed on mineral production at the micro level by initial investments in physical capital
- 4. Volatility in the value of mineral assets introduced by short-run price fluctuations of commodity prices



Question 2: Alternative valuation techniques?

- Valuations should be based on market prices
- Imputations are allowed when market prices are not available, e.g. market prices of similar products or hedonic methods based on product characteristics
- Some of the alternatives employed in SEEA are examples of these kinds of imputations
- Simulated exchange values or willingness-to-pay do not qualify and should not be incorporated into the SNA
- Separate group on valuation will provide more guidance on principles and methodologies for valuing transactions and positions



Question 3: Specific natural resources

- The main focus on this guidance note has been on nonrenewable energy resources
- Other GN focuses on renewable energy resources
- Also important to distinguish cultivated assets
- Important role of **proper classification** (see specific GN on classification issues)



Questions for AEG

- Do you agree to refer to the same three resource classes as in SEEA 2012 and to recommend their inclusion in NA, provided that separate estimates can be compiled?
- Do you agree to add clarifications on NPV calculation for mineral and energy resources, by explicitly referring to Chapter 5 of the SEEA-CF?
- Do you agree to add clarification that the value of mineral and energy deposits should be compiled at a disaggregated level (ideally at the deposit level)?
- Do you agree to emphasise specific compilation issues?
- Do you have any other comments with regard to the guidance note?
- Do you consider the guidance note ready for global consultation?